Journal of Applied Spectroscopy 2013 vol.80 N1, pages 138-141

Calculation of the stimulated photon echo in three-level and degenerate systems in the presence of external inhomogeneous electric fields

Nefediev L., Nizamova E.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

We consider the frequency-time correlation of inhomogeneous broadening and its effect on the intensity of the stimulated photon echo response in three-level and degenerate systems, in the presence of external inhomogeneous electric fields. We show that the frequency-time correlation coefficient for frequency shifts in different time intervals and the intensity of the stimulated photon echo response depend on the magnitude of the Stark constants for different resonant transitions and on the external inhomogeneous electric field gradients. We study the possibility of controlling the appearance time of the stimulated photon echo response in the nanosecond range. © 2013 Springer Science+Business Media New York.

http://dx.doi.org/10.1007/s10812-013-9734-3

Keywords

correlation coefficient, inhomogeneous broadening, stimulated photon echo